CLAIMS

1. A system for controlling execution timing of jobs, comprising:

job execution means for executing a plurality of jobs, wherein said plurality of jobs includes a first job executed at irregular time intervals and a second job executed at regular time intervals;

probability distribution forming means for determining a probability distribution for times at which execution of said first job occurs; and

execution timing means for scheduling execution of said second job in accordance with said probability distribution.

2. The system according to Claim 1, wherein the starting point of the probability distribution is set at the time at which said first job has completed execution.

3. The system according to Claim 1, wherein said probability distribution forming means includes means for determining the probability distribution with respect to time zones, week-day zones and/or seasonal zones, and

wherein said execution timing means schedules execution of said second job on the basis of the probability distribution according to the current time, the current day in a week and/or the current season.

4. The system according to Claim 1, wherein said probability distribution forming means includes means for determining the probability distribution in accordance with a predetermined number of latest data items in a predetermined last period in the data about the times at which execution of said first job has occurred.

5. The system according to Claim 2, wherein said probability distribution forming means includes:

time lapse measuring means for measuring a lapse of time from the time at which the first job execution is finished;

array means having array elements corresponding to a plurality of intervals defined by dividing the lapse of time from the time at which said first job execution is finished;

updating means for:

monitoring occurrences of execution of the first job; and

updating the value of the array element related to the interval corresponding to the lapse of time after an occurrence of execution of said first job; and

probability distribution computation means for computing the probability of occurrence of execution of said first job in each interval on the basis of the value of the corresponding array element.

6. The system according to Claim 5, wherein the length of each of the intervals is set longer than the time period required for processing said second job.

7. The system according to Claim 1, further comprising:

comparison means for comparing a reference value, Tmax, with a non-occurrence duration, t, defined as a time period between execution processing of said first job; and

execution inhibition means for inhibiting said job execution means from executing the second job until a condition: $t > Tmax$ is satisfied once after execution of said second job.

8. The system according to Claim 7, further comprising:

interval division means for dividing the lapse of time from the time at which said first job is finished into a plurality of intervals, wherein the lapse of time from the time at which said first job is finished is set as the time start point of said probability distribution;

expectation computation means, responsive to no execution of said first job from said time start point to the end of a first interval among said plurality of intervals, for utilizing said probability distribution to compute an expectation Tl as a predicted time period prior to a time at which said second job can be executed after completed execution of said first job from the end point of one of said plurality of intervals;

minimum probability interval detection means for detecting one of said plurality of intervals that corresponds to the minimum probability among said plurality of intervals between said time start point and Tm, wherein Tm is the end point of one of the intervals

in which Tl at the end point of each interval satisfies a condition: Tl < Tmax with respect to the predetermined reference value Tmax, and which is the furthest from the time start point; and

execution timing means for scheduling the execution of second job in the interval detected by said minimum probability interval detection means.

9. The system according to Claim 8, further comprising reference value setting means for controllably setting Tmax.

a pair of complementary data inputs;

a pair of data path pass-transistor logic (PTL) transistors configured as pass-gates with respect to each of said pair of complementary data inputs and having the PTL transistor gate terminals connected to a control node, wherein said pair of data path PTL transistors pass data from said pair of complementary data inputs into a pair of complementary storage nodes in response to a latch trigger pulse applied to said control node; and

a pulse generator that passes said latch trigger pulse to said control node in response to a clock signal transition.

10. A method for controlling execution timing of jobs, comprising:

executing a plurality of jobs, wherein said plurality of jobs includes a first job executed at irregular time intervals and a second job executed at regular time intervals;

determining a probability distribution for times at which execution of said first

job occurs; and

scheduling execution of said second job in accordance with said probability distribution.

11. The method according to Claim 10, further comprising setting the starting point of the probability distribution to the time at which said first job has completed execution.

12. The method according to Claim 10, further comprising:

determining the probability distribution with respect to time zones, week-day zones and/or seasonal zones, and

scheduling execution of said second job on the basis of the probability distribution according to the current time, the current day in a week and/or the current season.

13. The method according to Claim 10, further comprising determining the probability distribution in accordance with a predetermined number of latest data items in a predetermined last period in the data about the times at which execution of said first job has occurred.

14. The method according to Claim 11, further comprising:

measuring a lapse of time from the time at which the first job execution is finished;

generating array elements corresponding to a plurality of intervals defined by

dividing the lapse of time from the time at which said first job execution is finished;

monitoring occurrences of execution of the first job;

updating the value of the array element related to the interval corresponding to the lapse of time after an occurrence of execution of said first job; and

computing the probability of occurrence of execution of said first job in each interval on the basis of the value of the corresponding array element.

15. The method according to Claim 14, further comprising setting the length of each of the intervals longer than the time period required for processing said second job.

16. The method according to Claim 10, further comprising:

comparing a reference value, Tmax, with a non-occurrence duration, t, defined as a time period between execution processing of said first job; and

inhibiting said job execution means from executing the second job until a condition: $t > Tmax$ is satisfied once after execution of said second job.

17. The method according to Claim 16, further comprising:

dividing the lapse of time from the time at which said first job is finished into a plurality of intervals, wherein the lapse of time from the time at which said first job is finished is set as the time start point of said probability distribution;

responsive to no execution of said first job from said time start point to the end

of a first interval among said plurality of intervals, utilizing said probability distribution to compute an expectation Tl as a predicted time period prior to a time at which said second job can be executed after completed execution of said first job from the end point of one of said plurality of intervals;

detecting one of said plurality of intervals that corresponds to the minimum probability among said plurality of intervals between said time start point and Tm, wherein Tm is the end point of one of the intervals in which Tl at the end point of each interval satisfies a condition: Tl < Tmax with respect to the predetermined reference value Tmax, and which is the furthest from the time start point; and

scheduling the execution of second job in the interval detected by said minimum probability interval detection means.

18. The method according to Claim 17, further comprising controllably setting Tmax.

19. A program product for controlling execution timing of jobs, comprising:

program instructions for executing a plurality of jobs, wherein said plurality of jobs includes a first job executed at irregular time intervals and a second job executed at regular time intervals;

program instructions for determining a probability distribution for times at which execution of said first job occurs; and

program instructions for scheduling execution of said second job in accordance with said probability distribution.

20. The program product according to Claim 19, further comprising program instructions for setting the starting point of the probability distribution to the time at which said first job has completed execution.

21. The program product according to Claim 19, further comprising:

program instructions for determining the probability distribution with respect to time zones, week-day zones and/or seasonal zones, and

program instructions for scheduling execution of said second job on the basis of the probability distribution according to the current time, the current day in a week and/or the current season.

22. The program product according to Claim 19, further comprising program instructions for determining the probability distribution in accordance with a predetermined number of latest data items in a predetermined last period in the data about the times at which execution of said first job has occurred.

23. The program product according to Claim 20, further comprising:

program instructions for measuring a lapse of time from the time at which the first job execution is finished;

program instructions for generating array elements corresponding to a plurality of intervals defined by dividing the lapse of time from the time at which said first job execution is finished;

program instructions for monitoring occurrences of execution of the first job;

program instructions for updating the value of the array element related to the interval corresponding to the lapse of time after an occurrence of execution of said first job; and

program instructions for computing the probability of occurrence of execution of said first job in each interval on the basis of the value of the corresponding array element.

24. The program product according to Claim 23, further comprising program instructions for setting the length of each of the intervals longer than the time period required for processing said second job.

25. The program product according to Claim 19, further comprising:

program instructions for comparing a reference value, Tmax, with a non-occurrence duration, t, defined as a time period between execution processing of said first job; and

program instructions for inhibiting said job execution means from executing the second job until a condition: $t > Tmax$ is satisfied once after execution of said second job.

26. The program product according to Claim 25, further comprising:

program instructions for dividing the lapse of time from the time at which said first job is finished into a plurality of intervals, wherein the lapse of time from the time at which said first job is finished is set as the time start point of said probability distribution;

program instructions, responsive to no execution of said first job from said time start point to the end of a first interval among said plurality of intervals, for utilizing said probability distribution to compute an expectation Tl as a predicted time period prior to a time at which said second job can be executed after completed execution of said first job from the end point of one of said plurality of intervals;

program instructions for detecting one of said plurality of intervals that corresponds to the minimum probability among said plurality of intervals between said time start point and Tm, wherein Tm is the end point of one of the intervals in which Tl at the end point of each interval satisfies a condition: Tl < Tmax with respect to the predetermined reference value Tmax, and which is the furthest from the time start point; and

program instructions for scheduling the execution of second job in the interval detected by said minimum probability interval detection means.

27. The program product according to Claim 26, further comprising program instructions for controllably setting Tmax.